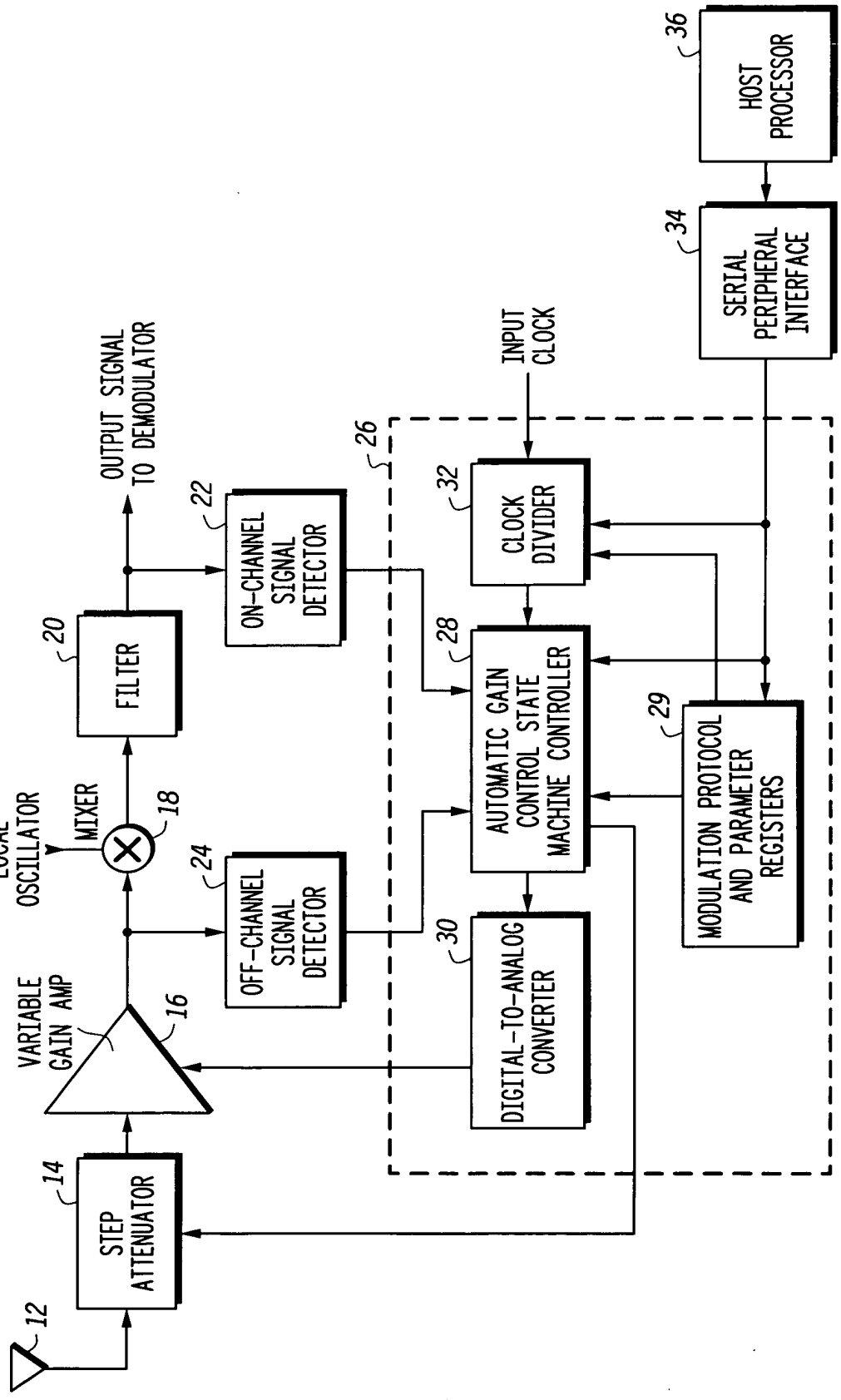


FIG. 1

	TH2	TH1	A	B	C	
AGC STATE	1	2	3	4	5	... N
RECEIVED SIGNAL STRENGTH	RANGE -2 MUCH LOWER THAN DESIRED (<TH2)	RANGE -1 LOWER THAN DESIRED (<TH1)	RANGE 0 DESIRED RANGE (TH1-A)	RANGE 1 HIGHER THAN DESIRED (>A)	RANGE 2 MUCH HIGHER THAN DESIRED (>B)	ADDITIONAL RANGES, IF ANY
AGC ACTION	GAIN UP (DECREASE ATTENUATION)	GAIN UP	NO CHANGE	GAIN DOWN (INCREASE ATTENUATION)	GAIN DOWN	EXTRA STATES POSSIBLE
UPDATE RATE	MODERATE	SLOW	NONE	FAST	VERY FAST	TO BE DETERMINED
AGC STEP SIZE	4 x LSB OF DAC 30	1 x LSB OF DAC 30	NONE	1 x LSB OF DAC 30	6 x LSB OF DAC 30	N x LSB OF DAC 30
ENABLE/DISABLE STATE	DISABLE (TH2_DISABLE .... THX_DISABLE=1)	ENABLE (TH1_DISABLE=0)	ENABLE	ENABLE (CMP_A_DISABLE=0)	ENABLE (CMP_B_DISABLE=0)	SELECTABLE (CMP_N_DISABLE=?)
ADAPT INITIATION HOLDOFF TIME *(FIG. 8)*	20 ITERATIONS	NONE	NONE	NONE	4 ITERATIONS	K x LSB

FIG. 2

FIG. 3

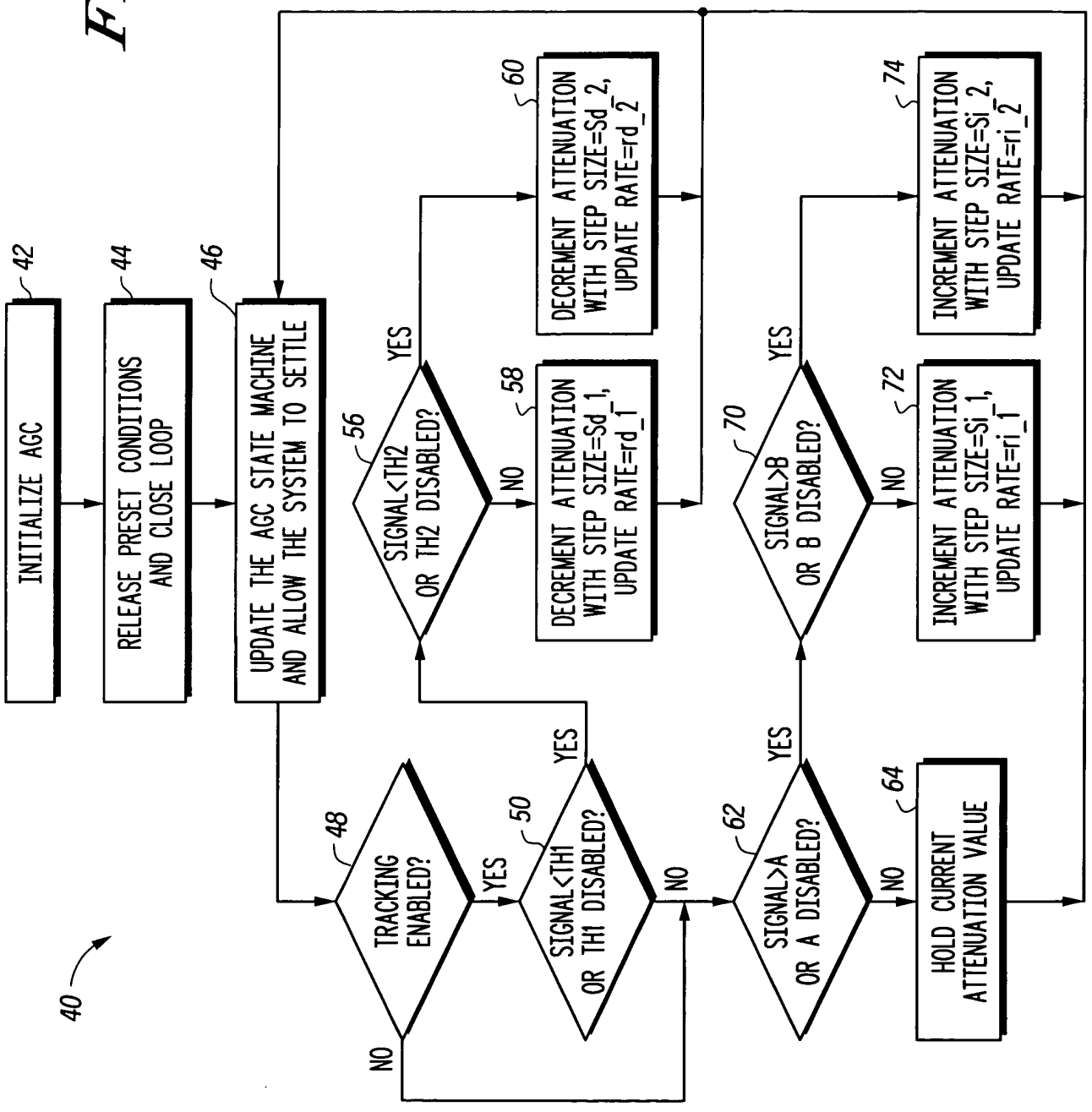
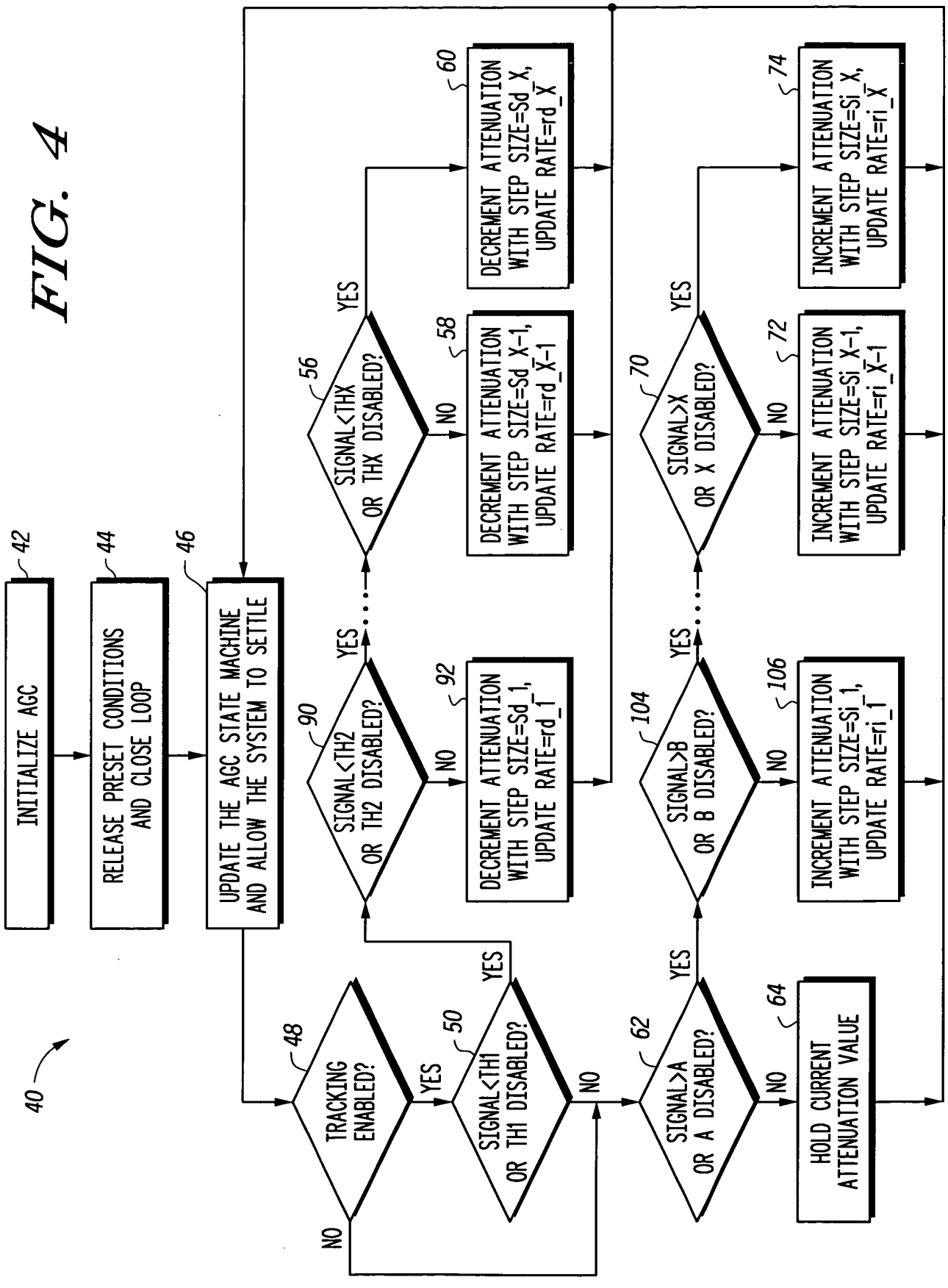

40
INITIALIZE AGC
42
RELEASE PRESET CONDITIONS AND CLOSE LOOP
44
UPDATE THE AGC STATE MACHINE AND ALLOW THE SYSTEM TO SETTLE
46
TRACKING ENABLED?
48
YES
NO
SIGNAL<TH1 OR TH1 DISABLED?
50
YES
NO
SIGNAL<TH2 OR TH2 DISABLED?
56
YES
NO
DECREMENT ATTENUATION WITH STEP SIZE=Sd_2, UPDATE RATE=rd_2
60
DECREMENT ATTENUATION WITH STEP SIZE=Sd_1, UPDATE RATE=rd_1
58
SIGNAL>A OR A DISABLED?
62
YES
NO
SIGNAL>B OR B DISABLED?
70
YES
NO
INCREMENT ATTENUATION WITH STEP SIZE=Si_2, UPDATE RATE=ri_2
74
INCREMENT ATTENUATION WITH STEP SIZE=Si_1, UPDATE RATE=ri_1
72
HOLD CURRENT ATTENUATION VALUE
64

FIG. 4


40
42
INITIALIZE AGC
44
RELEASE PRESET CONDITIONS AND CLOSE LOOP
46
UPDATE THE AGC STATE MACHINE AND ALLOW THE SYSTEM TO SETTLE
48
TRACKING ENABLED?
YES
NO
50
SIGNAL<TH1 OR TH1 DISABLED?
YES
NO
62
SIGNAL>A OR A DISABLED?
YES
NO
64
HOLD CURRENT ATTENUATION VALUE
90
SIGNAL<TH2 OR TH2 DISABLED?
YES
NO
92
DECREMENT ATTENUATION WITH STEP SIZE=Sd_1, UPDATE RATE=rd_1
56
SIGNAL<THX OR THX DISABLED?
YES
NO
58
DECREMENT ATTENUATION WITH STEP SIZE=Sd_X-1, UPDATE RATE=rd_X-1
60
DECREMENT ATTENUATION WITH STEP SIZE=Sd_X, UPDATE RATE=rd_X
104
SIGNAL>B OR B DISABLED?
YES
NO
106
INCREMENT ATTENUATION WITH STEP SIZE=Si_1, UPDATE RATE=ri_1
70
SIGNAL>X OR X DISABLED?
YES
NO
72
INCREMENT ATTENUATION WITH STEP SIZE=Si_X-1, UPDATE RATE=ri_X-1
74
INCREMENT ATTENUATION WITH STEP SIZE=Si_X, UPDATE RATE=ri_X

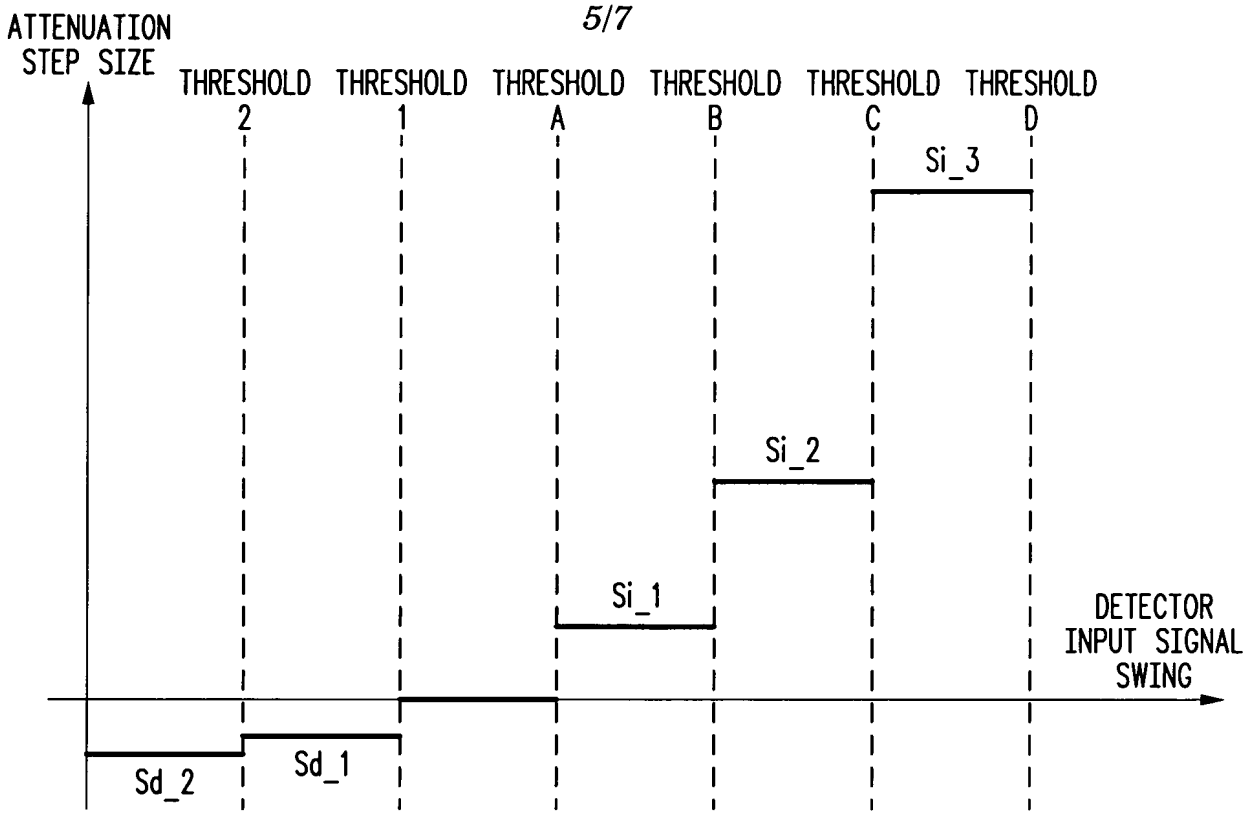

ATTENUATION
STEP SIZE
THRESHOLD 2
THRESHOLD 1
THRESHOLD A
THRESHOLD B
THRESHOLD C
THRESHOLD D
Si_3
Si_2
Si_1
DETECTOR
INPUT SIGNAL
SWING
Sd_2
Sd_1

FIG. 5

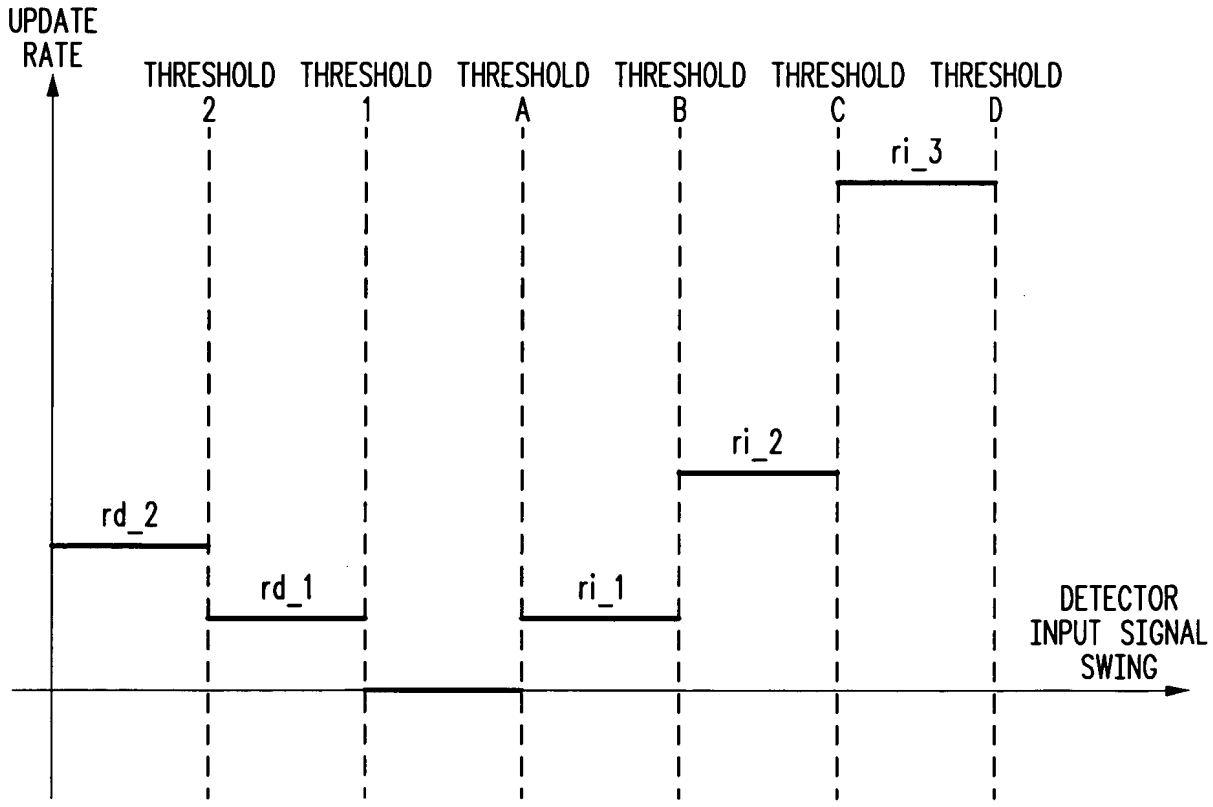

UPDATE
RATE
THRESHOLD 2
THRESHOLD 1
THRESHOLD A
THRESHOLD B
THRESHOLD C
THRESHOLD D
ri_3
ri_2
rd_2
rd_1
ri_1
DETECTOR
INPUT SIGNAL
SWING

FIG. 6

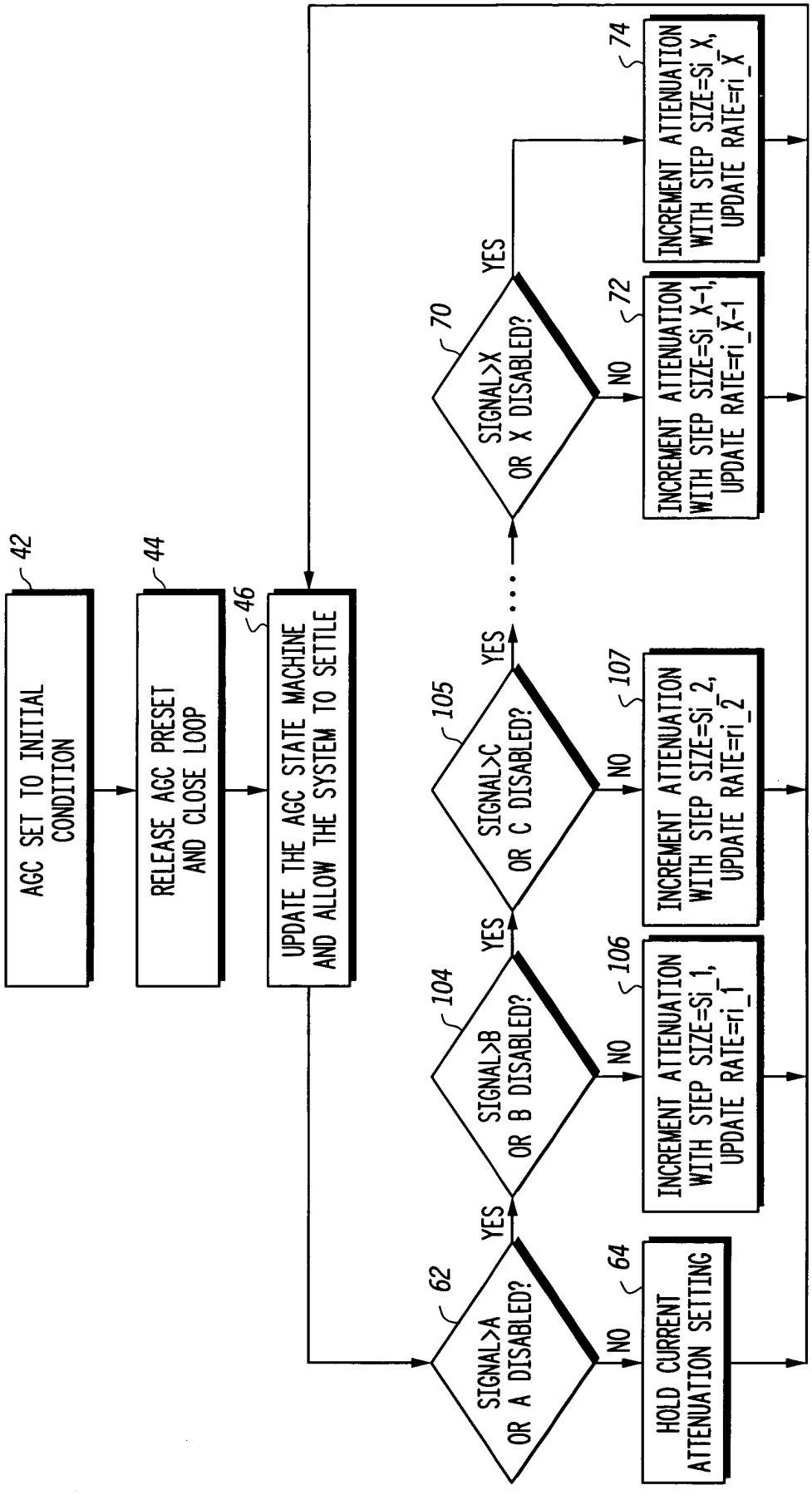

AGC SET TO INITIAL CONDITION
42
RELEASE AGC PRESET AND CLOSE LOOP
44
UPDATE THE AGC STATE MACHINE AND ALLOW THE SYSTEM TO SETTLE
46
SIGNAL>A OR A DISABLED?
62
YES
NO
HOLD CURRENT ATTENUATION SETTING
64
SIGNAL>B OR B DISABLED?
104
YES
NO
INCREMENT ATTENUATION WITH STEP SIZE=Si_1, UPDATE RATE=ri_1
106
SIGNAL>C OR C DISABLED?
105
YES
NO
INCREMENT ATTENUATION WITH STEP SIZE=Si_2, UPDATE RATE=ri_2
107
SIGNAL>X OR X DISABLED?
70
YES
NO
INCREMENT ATTENUATION WITH STEP SIZE=Si_X-1, UPDATE RATE=ri_X-1
72
INCREMENT ATTENUATION WITH STEP SIZE=Si_X, UPDATE RATE=ri_X
74

FIG. 7

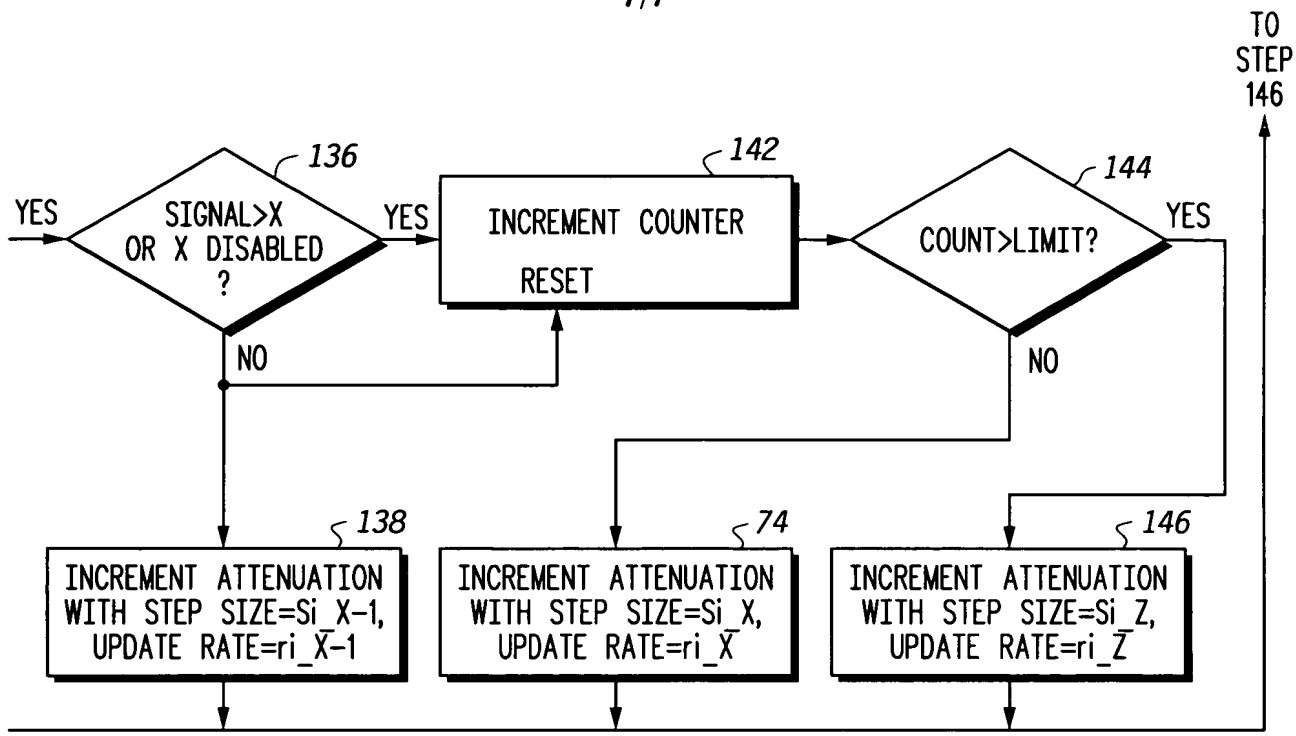

TO STEP 146
136
142
144
YES
SIGNAL>X OR X DISABLED ?
YES
INCREMENT COUNTER RESET
COUNT>LIMIT?
YES
NO
NO
138
74
146
INCREMENT ATTENUATION WITH STEP SIZE=Si_X-1, UPDATE RATE=ri_X-1
INCREMENT ATTENUATION WITH STEP SIZE=Si_X, UPDATE RATE=ri_X
INCREMENT ATTENUATION WITH STEP SIZE=Si_Z, UPDATE RATE=ri_Z

FIG. 8